

Information on Submission of Proposals for DOE Laboratory Activities in ***Nanoscale Science, Engineering, and Technology***

Office of Basic Energy Sciences
Office of Science, U.S. DOE

Proposals for Group Activities at DOE Laboratories in the Area of Nanoscale Science, Engineering, and Technology:

Funds up to \$18 M have been set aside in fiscal year (FY) 2001 for the purpose of supporting activities that address research in the area of nanoscale science, engineering, and technology (NSET). This work represents DOE's contribution to the National Nanotechnology Initiative (NNI). The BES program has worked with the National Science and Technology Council's Interagency Working Group on Nanoscale Science, Engineering, and Technology (IWGNSET), with the Basic Energy Sciences Advisory Committee (BESAC), and with the broad scientific community from academia, industry, and the national laboratories to define and articulate the goals of this research and to determine how best to implement a program of research within the NNI.

The BES NSET program has the following goals: (1) attain a fundamental scientific understanding of nanoscale phenomena; (2) achieve the ability to design and synthesize materials at the atomic level to produce materials with desired properties and functions; (3) attain a fundamental understanding of the natural processes for the creation of materials and functional systems to serve as a guide and a benchmark by which to measure progress in synthetic design and synthesis; and (4) develop experimental characterization tools and theory/modeling/simulation tools necessary to understand, predict, and control nanoscale phenomena.

Two recent reports prepared by the BES program, which address both NSET research and broader program goals that are dependent on nanoscale understanding, are available on the internet. These reports are *Complex Systems: Science for the 21st Century* (1999) available at <http://www.er.doe.gov/production/bes/complexsystems.htm> and *Nanoscale Science, Engineering and Technology Research Directions* (1999) available at <http://www.er.doe.gov/production/bes/nanoscale.html>. These reports form the basis for DOE's participation in the National Nanotechnology Initiative (NNI).

This call is for proposals for group activities at DOE laboratories.

Types of Proposals Considered:

Proposals must have an emphasis in materials sciences and engineering or in chemical sciences and may include aspects of nanobiosciences or geosciences within the scope of NSET. These proposals can extend ongoing research in a core program. However, proposals should not supplement programs that have been identified for normal termination. Proposals for extended core program research must describe both a new opportunity and a new direction for the core program and must represent work that could not otherwise be funded within existing support levels.

Please contact Iran Thomas (301-903-3427) or William Millman (301-903-5804), respectively, for additional information on suitability of proposals in materials sciences and engineering or in chemical sciences. Proposals can include aspects of nanobiosciences or geosciences; please contact William Millman for additional information on these areas. Proposals that include aspects of nanobiosciences should focus on developing an understanding of the synthetic pathways, structures, properties, and functions of plant and microbial biomolecular assemblies that impact concepts for bio-derived fuels, chemicals, and/or materials.

Note that proposals that involve the interface between biology and materials sciences are considered suitable for this call for proposals. Please contact Iran Thomas (301-903-3427) for additional information on suitability of proposals in materials sciences.

Proposals for beamlines or major instrumentation associated with user facilities will be accepted in this competition only if they relate to a Nanoscale Science Research Center.

Limit on Number of Proposals/Eligibility of PIs:

No more than four proposals may be submitted from a single Laboratory. No individual may be the lead principal investigator on more than one proposal. The lead principal investigator must be an employee of the Laboratory.

Estimated Award Size:

The proposal may request funds up to \$2 million per year and should be for an initial duration of four years beginning in FY 2001. Support beyond the initial period will be contingent upon a favorable review of progress and impact.

Award Selection Criteria:

All proposals will be peer reviewed by at least three external reviewers. The award selection criteria will include the standard measures used both for laboratory and university proposals. These are:

- Scientific and/or technical merit of the project,
- Appropriateness of the proposed method or approach,
- Competency of applicant's personnel and adequacy of proposed resources,
- Reasonableness and appropriateness of the proposed budget.

Additional criteria for proposals submitted by laboratories under this call are:

- Innovativeness and originality,
- Alignment with the themes described in *Complex Systems: Science for the 21st Century* and in *Nanoscale Science, Engineering and Technology Research Directions*,
- Alignment with the Laboratory's core competencies in areas of BES facilities or programs and with its strategic vision,
- Relevance to BES missions. See <http://www.sc.doe.gov/production/bes/bes.html>.

Other factors that may be taken into consideration include multi-disciplinary research, multi-investigator proposals, incorporation of academic and/or industrial partnerships, and diversity and outreach.

Proposal Preparation Guidelines:

Proposals should be submitted through the FWP process with the usual concise wording and format. In addition to the FWP, a proposal support document of no more than 30 pages suitable for peer review should be submitted. The support document should address the selection criteria given above and should contain pertinent management details and, if appropriate, information on subcontracts.

Proposal Submission:

The proposal and the FWP (25 copies each) should arrive at Germantown by Wednesday, January 24, 2001. Submit proposals to either:

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